

## Two new species of *Platynereis* (Polychaeta: Nereididae) from eastern Mexican shores

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*Abstract.*—Two new species of *Platynereis* are described from Mexican shores, *P. hutchingsae*, new species and *P. mucronata*, new species. These species differ from others in the genus mainly by the disposition and shape of the setae.

Specific diversity in the genus *Platynereis* in Mexican littoral areas is low. Until this study, only three species were known: *P. bicaniculata*, *P. dumerilii* and *P. polyscalma*. Of these, the second was found to have the widest distribution, having been found practically in all regions sampled in the Gulf of Mexico, Mexican Caribbean and the northwestern coast of Mexico (de León-González 1998). The two new species of *Platynereis* that are described herein were collected from quite different substrates. The terminology of parapodial structures is based on that proposed by Hutchings & Reid (1990).

The type material is deposited in the Polychaetological collections of both the Facultad de Ciencias Biológicas, Universidad Autónoma de Nuevo León (UANL), and the Instituto de Ciencias del Mar y Limnología, U.N.A.M. (CPICML).

### *Platynereis hutchingsae*, new species

Figs. 1, 3

*Material examined.*—Campeche: Col. V. Solís-Weiss and collaborators, Términos Lagoon, San Julián, 3 Mar 1984, (holotype UANL 4281), and one paratype (UANL 4282).

*Description.*—Holotype complete with 75 setigers, without pigmentation pattern, 16 mm long and 1.5 mm wide, including setae.

Prostomium pentagonal, with pair of slender antennae slightly exceeding distal margin of palps. Two pairs of eyes in trapezial arrangement, anterior ones with lens, posterior ones rounded, partially covered by anterior margin of peristomium. Biarticulate palps ventrally directed. Peristomium as long as next segment, with four pairs of tentacular cirri, longest pair extending to posterior margin of their setiger (Fig. 1a).

Pharynx with translucent pectinate bars in following arrangement: Areas I, II, IV and V with no pectinate bars; III with 3 small pectinate bars; VI each with a pectinate bar; VII–VIII with 5 hardly visible pectinate bars (Fig. 3a, b).

Anterior parapodia with notopodium formed of triangular, distally blunt, ligule, mamilliform median ligule, superior lobe not evident; neuropodium formed of triangular, postsetal lobe, truncate inferior lobe, and subulate ventral ligule. Dorsal cirrus inserted on median posterior region of dorsal ligule, ventral cirrus inserted basally to ventral ligule, cirri subequal (Fig. 1b). Middle parapodia with triangular dorsal and median ligules, dorsal ligules smaller; neuropodium formed by conical postsetal lobe and subulate ventral ligule. Dorsal cirrus inserted at base of dorsal ligule, slightly longer than ventral cirrus (Fig. 1c). Posterior notopodium with dorsal ligule with proximal portion enlarged and distal

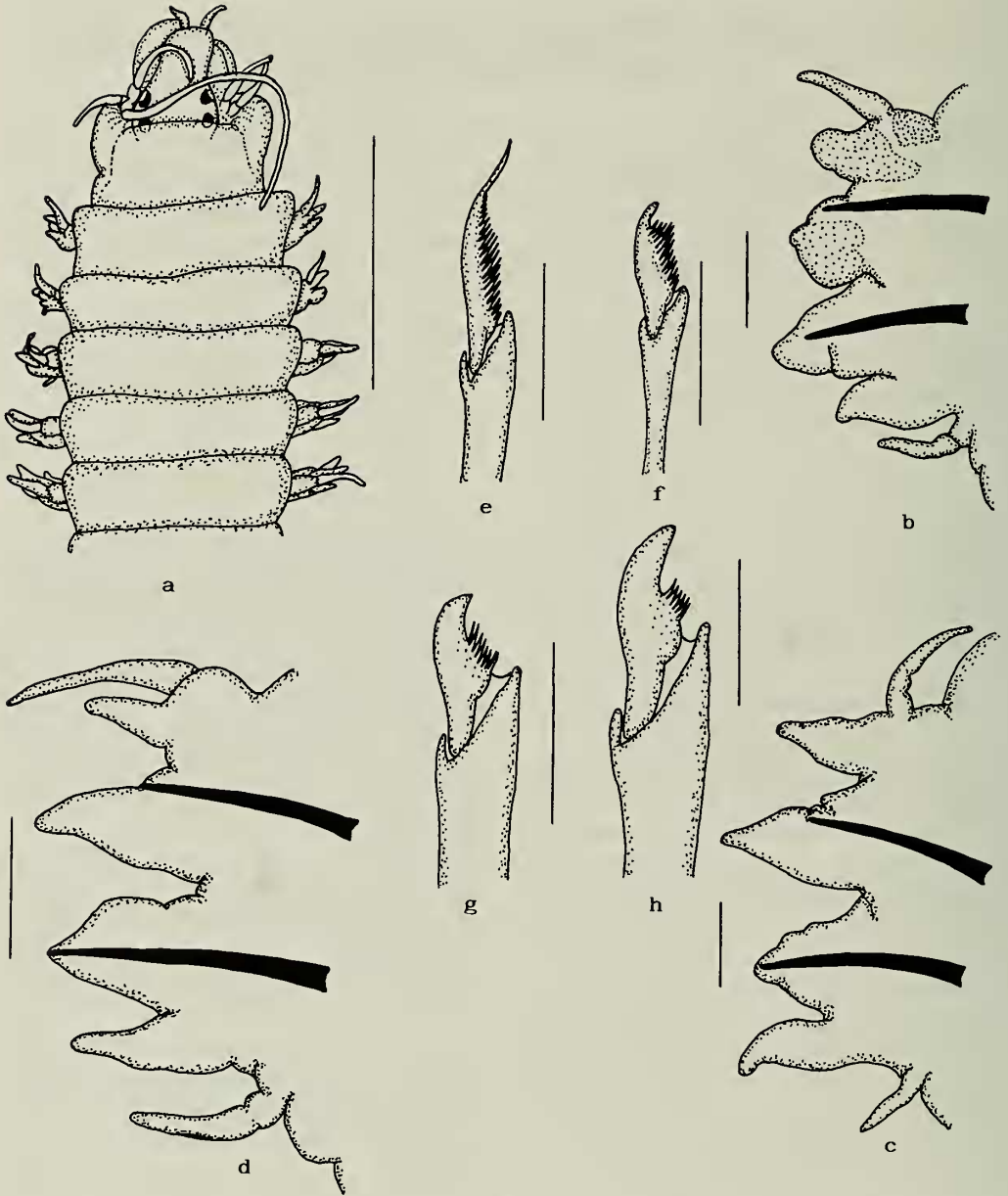


Fig. 1. *Platynereis hutchingsae* n. sp.: a, anterior region, dorsal view; b, parapodium 11; c, parapodium 31; d, parapodium 62; e, supra-acicular neuropodial spiniger, setiger 11; f, infra-acicular neuropodial falciger, setiger 11; g, neuropodial supra-acicular falciger, setiger 31; h, infra-acicular neuropodial falciger, setiger 62. Scale bars: a—1 mm; b—d—150  $\mu$ m; e—h—30  $\mu$ m.

portion slender; median ligule subulate, longer than dorsal ligule; neuropodium formed by proximally enlarged postsetal lobe ending in short cone; ventral ligule conical, smaller than postsetal lobe. Dorsal cirrus inserted on

median posterior region of dorsal ligule, slightly longer than ventral cirrus (Fig. 1d).

Setae of anterior parapodia in following arrangement: notosetae consisting of 12 homogomph spinigers; supra-acicular neu-

roseta numbering seven homogomph spinigers and three heterogomph spinigers, latter with short blade, strongly spinulate on internal margin (Fig. 1e); infra-acicular neurosetae consisting of two heterogomph spinigers with long, slender blade with numerous small teeth, numerous heterogomph falcigers with blade slender and with slender dentition (Fig. 1f), and single heterogomph spiniger in inferior portion of fascicle. Setae of median parapodia in following arrangement: notosetae numbering 10 homogomph spinigers; supra-acicular neurosetae with four homogomph spinigers with long, slender blade, and two heterogomph falcigers with short and curved blade, latter with spines along half internal margin (Fig. 1g); infra-acicular neurosetae two heterogomph spinigers with long slender blade and seven heterogomph falcigers with blades similar to those of supra-acicular. Posterior notopodia with numerous homogomph spinigers; supra-acicular neuroseta three homogomph spinigers and two heterogomph falcigers; infra-acicular neurosetae heterogomph spinigers with long and slender blades, and three heterogomph falcigers with short and curved blades, latter with few teeth or spines on internal basal margin (Fig. 1h).

Pygidium with dorsal and opening and two small ventral and cirri.

*Discussion.*—Both *Platynereis hutchingsae* and *P. australis* (Schmarda, 1861) lack homogomph notopodial falcigers. Day (1967) and Imajima (1972) noted that in *P. australis* this type of seta can be present on the last 10 parapodia of juveniles; however, in the specimens described here notopodial falcigers are not present. *P. hutchingsae* and *P. australis* are the only species in the genus lacking homogomph notopodial falcigers, at least in the adult stage.

These species can be differentiated as follows: *P. australis* lacks pectinate bars on areas I, II and V, pectinate bars of area VI and VII–VIII are doubled, whereas *P. hutchingsae* lacks pectinate bars on areas I, II, IV and V, and pectinate bars of areas VI

and VII–VIII are plain. The heterogomph neuropodial supra-acicular spinigers of anterior parapodia of *P. australis* have a long and slender blade with small teeth, while the blades of heterogomph neuropodial supra- and infra-acicular falcigers of median and posterior parapodia have an anterior recurved tooth; in *P. hutchingsae* however, the blades of these spinigers are short with long teeth; also, the distal part of the blade of the heterogomph neuropodial falcigers has no recurved teeth, and dentition of these falcigers is clearly different.

*Etymology.*—The species is named in honor of Dr. Patricia Hutchings, eminent polychaetologist of The Australian Museum, Sydney for her many contributions in nereidid taxonomy and for her unconditional assistance to the authors for many years.

*Distribution.*—Endemic. Only known from a single locality in Términos Lagoon, southern Gulf of Mexico.

*Habitat.*—Among sediment trapped in rhizomes of *Thalassia testudinum*.

*Platynereis mucronata*, new species

Figs. 2, 3

*Material examined.*—Tamaulipas: Col. J. A. de León-González, La Pesca, 12 Apr 1991 (Holotype UANL 3975); Col. G. Guajardo-Martínez, La Pesca, 20 May 1995 (UANL), 1 specimen; Col. J. A. de León-González, Tampico, Stn. ET-04, 8 Mar 2000 (UANL 4083), 2 specimens, Stn. ET-03, 8 Mar 2000 (UANL 4091) 7 specimens. Veracruz: Villa del Mar beach, 10 Aug 1999 (UANL 4028) 2 specimens, Villa Rica, 10 Aug 1999 (UANL 4092) 6 specimens. All records in intertidal waters. Quintana Roo: Col. V. Valadez-Rocha and A. Granados-Barba, Caetita, Cozumel Island, Stn. Cz5R2 (2 specimens), 3 m, Stn. Cz5R3 (1 specimen), 13 m (POICML).

*Description.*—Holotype complete with 62 setigers, without evident pigment pattern, 19 mm long and 2 mm wide, including parapodia. Prostomium pentagonal, four eyes in trapezial arrangement, the anterior-

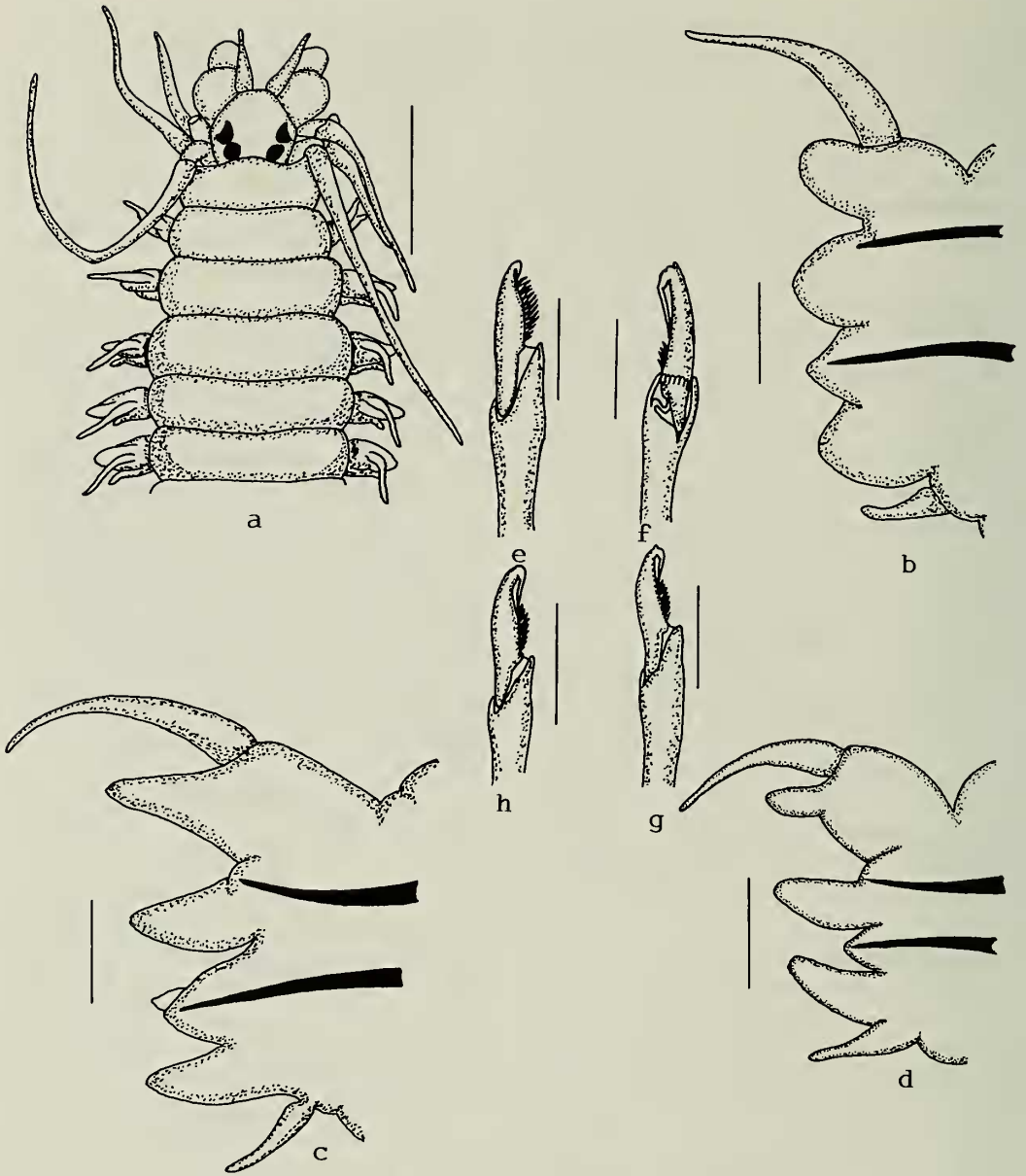


Fig. 2. *Platynereis mucronata* n. sp.: a, anterior region, dorsal view; b, parapodium 10; c, parapodium 31; d, parapodium 51; e, supra-acicular neuropodial falciger, setiger 10; f, notopodial falciger, setiger 51; g, supra-acicular neuropodial falciger, setiger 51; h, infra-acicular neuropodial falciger, setiger 51. Scale bars: a—0.5 mm; b—d—150  $\mu$ m; e—h—30  $\mu$ m.

most more widely separated and lensed, posterior ones rounded. Frontal antennae cirriform. Biarticulate palps stout, globular palpostyle longer than half length of total palp. Peristomium with four pairs of tentac-

ular cirri, longest pair extending to about setiger 6 (Fig. 2a).

Pharynx with pectinate paragnaths on both rings in the following arrangement: I, II and V with no paragnaths; III 3 small



Fig. 3. *Platynereis hutchingsae* n. sp.: a, pharynx, dorsal view; b, pharynx, ventral view. *Platynereis mucronata* n. sp.: c, pharynx, dorsal view; d, pharynx, ventral view.

pectinate bars in a transverse line; IV 4 pectinate bars, 3 small and one elongate; VI 2 pectinate bars; VII–VIII 5 plain pectinate bars in a transverse line (Fig. 3c, d).

Anterior parapodia with dorsal, median and ventral ligules rounded, postsetal lobe

triangular, dorsal cirrus medially inserted (Fig. 2b). Middle parapodia with dorsal ligules expanded, median and ventral ligules subtriangular, postsetal lobes conical; dorsal cirri medially inserted, ventral cirri similar, smaller (Fig. 2c). Posterior parapodia with

tips of dorsal ligules globular, median ligule with tip more rounded, dorsal cirri inserted in median anterior position (Fig. 2d).

Setation in anterior parapodia as follows: notosetae homogomph supra-acicular spinigers; neurosetae supra-acicular homogomph spinigers and heterogomph falcigers, blades of latter with internal margins strongly dentate and with short distal tooth directed downward (Fig. 2e); infra-acicular setae heterogomph spinigers and falcigers similar to supra-acicular ones. Middle notopodia with supra-acicular spinigers and homogomph falcigers, blades of latter with small apical mucron and slender tooth directed downwards, and fused to internal margin of blade; 4 small teeth present on basal internal region of blade; supra-acicular neurosetae homogomph spinigers and heterogomph falcigers, infra-acicular setae only heterogomph falcigers. Posterior notopodia with homogomph spinigers and falcigers, blades of latter with apical mucron, frontally bilobate, with distal tooth directed proximally, inferior part scarcely dentate, blade linked to shaft by an "S" shaped ligament, shaft with lobulate membrane surrounding base of blade (Fig. 2f); supra-acicular neurosetae homogomph spinigers and heterogomph mucronate falcigers (Fig. 2g), infra-acicular neuroseta only heterogomph falcigers with tips of blades rounded, without mucron (Fig. 2h).

Pygidium with terminal anus and 2 long anal cirri.

*Discussion.*—*Platynereis mucronata*, new species, is similar to *P. dumerilii* and *P. hutchingsae*, new species, in the shape of the dorsal ligule of posterior parapodia; the two new species can be differentiated from *P. dumerilii* in the ornamentation of the pharynx: in both new species, pectinate simple bars are present on areas VI and VII–VIII, whereas in *P. dumerilii* double pectinate bars are present. *Platynereis mucronata* and *P. hutchingsae* differ from each other in the structural shape of the falcigers blade. Also, *P. coccinea* (delle Chiaje, 1841) is similar to *P. mucronata* in hav-

ing an apical mucron in the tip of the blade of homogomph notopodial falcigers, but the latter differs from the former in the pharyngeal arrangement in that pectinate bars are present only on Area IV in *P. coccinea* (see Fauvel 1923).

*Etymology.*—Specific name refers to the mucron present on the tip of the blade of both the notopodial homogomph falcigers and the supra-acicular neuropodial heterogomph falcigers of the new species. The Latin adjective *mucronatus* is from Latin *mucro*, *mucronis* = a sharp point.

*Distribution.*—Western Atlantic. This species has been collected in the type locality of La Pesca, Tamaulipas, Gulf of Mexico, as well as in the reef zone of Cozumel Island in the Mexican Caribbean.

*Habitat.*—La Pesca, Tamaulipas, among algae fixed to rocks of breakwaters; in Cozumel, Mexican Caribbean as part of the sponge cryptofauna.

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